REMARKS

Favorable reconsideration of this application in view of the above amendments and the following remarks is respectfully requested. By this amendment, claims 1, 24 and 44 have been amended to more clearly recite the subject matter of the instant application, claims 41-43 have been canceled without prejudice or disclaimer and claim 47 has been added. Applicant submits that no new matter has been added and formal notice of such is solicited.

The Office Action rejects claims 1, 3-10, 12-17, 19-31, 33-38 and 40-43 under 35 USC 103(a) as unpatentable over by Doucet et al., U.S. Patent 5,786,923 (hereinafter, Doucet) in view of Liou, U.S. Patent No. 5,623,363 (hereinafter, Liou). The Office Action rejects claims 11 and 32 under 35 USC 103(a) over the combination of Doucet, Liou and Meadows, U.S. Patent No. 5,381,250 (hereinafter, Meadows). The Office Action rejects claims 18 and 39 under 35 USC 103(a) as obvious in view of Doucet and Liou, in further view of Yonenaga, U.S. Patent No. 5,543,952. Finally, the Office Action rejects claims 44-46 under 35 USC 103(a) as obvious in view of Doucet and Liou, in further view of Huggins, U.S. Patent No. 4,799,797. These rejections are respectfully traversed.

Doucet relates to a point-to-multipoint bi-directional wide area telecommunications network using atmospheric optical communication that includes a primary transceiver unit, a plurality of subscriber transceiver units, and an optical router. Doucet '923 describes multi-mode transmissions.

Liou relates to a semiconductor light source that is capable of producing either single or multi-mode light. Liou makes no teaching or suggestion of using the single mode light source in connection with free space optical communications.

Neither Doucet nor Liou describes the benefits in a long range free space optical communication system of using single mode phase incoherent light to reduce the effects of atmospheric turbulence and also scintillation, and to optimize the energy efficiency of an optical transmission. These concepts are expressed in all of the independent claims of the present application and should be given patentable weight. According to the present invention, by

removing or substantially reducing scintillation effects, the throughput of the free space optical link can be greatly increased, even over relatively long distances, i.e., greater than 1 km.

Furthermore, there is no motivation in Doucet or Liou to combine their teachings because neither reference discusses reducing atmospheric scintillation in free space optical communication. Indeed, Liou makes no teaching or suggestion of any particular application of single mode light and Doucet does not even acknowledge the problem of atmospheric scintillation in free space optical communication.

The present invention, as now clarified in independent claims 1, 24, 44 and 47 takes recognition of the benefits of single mode phase incoherent light for optical communication in free space over relatively long distances. In particular, according to the present invention, a method for reducing atmospheric turbulence (which leads to scintillation) effects in free space optical communications is provided involving the use of phase incoherent single mode light. The single mode form of light is used for efficient energy propagation and the phase incoherent light is used to mitigate turbulence/scintillation/speckle effects on the optical link.

The secondary references to Yonenaga and Meadows add nothing further to the teachings of Doucet and Liou that relates to the subject matter described above.

Applicant submits that all pending claims are in condition for allowance, and formal notice of such is solicited. If the Examiner has any questions, the Examiner is respectfully requested to contact the undersigned at the number listed below.

It is believed that no fees are required at this time. However, Applicant hereby petitions for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 05-0460.

Respectfully submitted,

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